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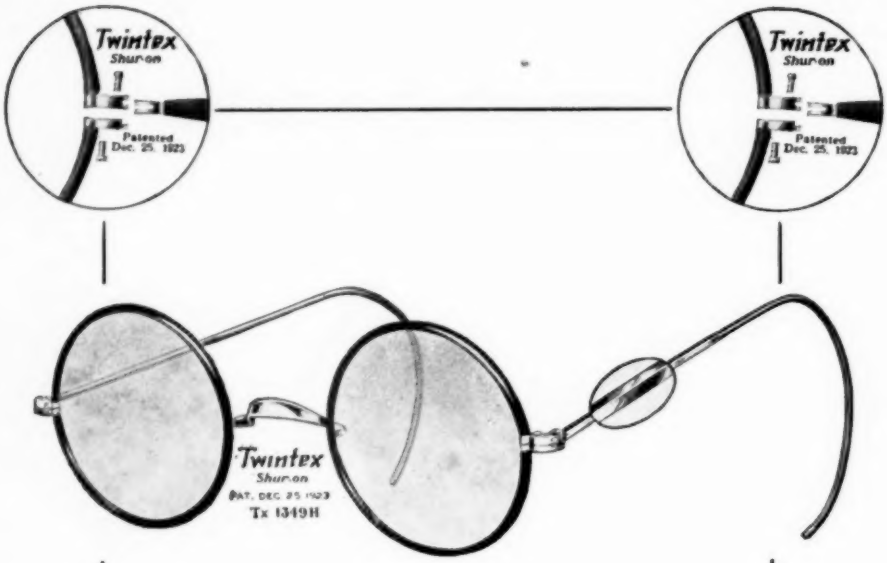

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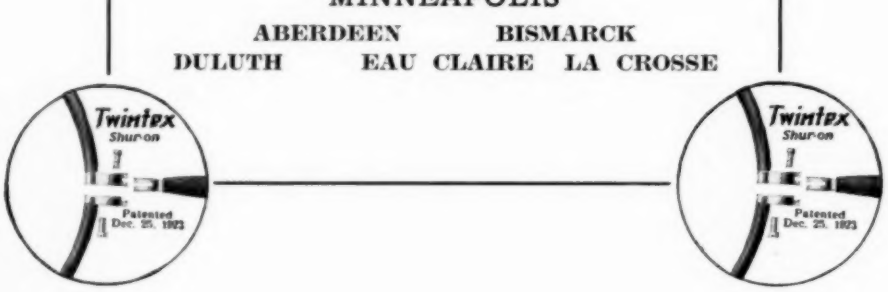

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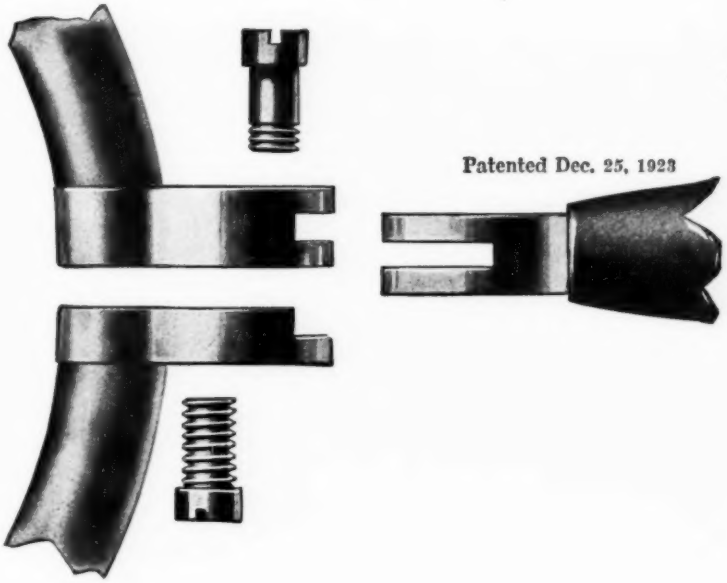

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CHARTING THE VISUAL FIELD

Carel C. Koch, Opt.D., F.A.A.O.

Minneapolis, Minn.

During the course of a routine refraction one of the chief diagnostic instruments at the command of the refractionist is the perimeter. This is an instrument that ranks as high in its usefulness to the refractionist as the ophthalmoscope, or the sphygmomanometer. At first thought, one may be prone to question this assertion and even back his question with the statement, that, this being true, why aren't there more perimeters now in use in the offices of refractionists throughout the country.

In answer to the foregoing question, may I say that it is regretably true that only a small per cent of the refractionists of the United States today use, or make any effort to acquire the knowledge of the patient's condition through the part of refractive technic called perimetry. This is true, partly for three reasons. First, the colleges and universities teaching refraction make but small mention at best of this important part of the refraction procedure. Second, the majority of the refractionists are prone to rely upon the ophthalmoscope only, or at best the ophthalmoscope and the sphygmomanometer for determining the exact health status of the eye. Third, the time required for complete charting of the patient's visual field has led many of our busiest practitioners to neglect this feature of the routine refraction in the effort to do more work per day.

The word perimetry is used as a general term to apply to the measurement and charting of the visual field. By this is meant the measuring of that portion of the retina that is actually used, directly or indirectly, by the patient in an effort to see. In reality perimetry is a subjective ophthalmoscopic test. As you all know, ophthalmoscopy is objective, that is, the results of the test rely entirely upon the refractionist's ability, while in perimetry one actually charts the field of vision while the retina is at work, relying entirely upon the answers of the patient, thus it being entirely subjective. This is our only means of actually knowing whether the sensitive layers of the retina are functioning as they should, in as much as the retina may appear normal to the refractionist while using the ophthalmoscope and still the visual field may be much smaller than normal or various types of scatomas may be present to diminish visual acuity.

To determine the exact field of vision and color perception the refractionist has four general methods of procedure at his command. First, the hand test; Second, the Morton perimeter test; Third, the stero-campimeter test, and Fourth, the perimeter test. I shall describe these various methods briefly in the order named.

The Hand Test—In this, the most inaccurate method of taking the patient's field of vision, no equipment is needed. The refractionist's field of vision must be normal, for it is by comparing his own field with that of the patient that the test is carried out. The method of procedure is as follows: The patient is first seated comfortably. The room is well illuminated. The refractionist next seats himself directly before the patient about an arm's length away. Assuming that the refractionist wished to determine the approximate extent of the indirect form field of the right eye, he now covers the patient's left eye with his (the refractionist's) right hand, at the same time closing his own right eye. The patient is then instructed to look with his right eye straight ahead into the open left eye of the refractionist. The refractionist then takes some small object, a pencil, for instance, and holding it in his left hand midway between himself and the patient as far out to his left as possible. He then instructs the patient to tell him the moment the moving pencil can be seen, as he draws it in towards him. At all times, I repeat, the patient's direct line of vision must be straight ahead into the left eye

of the refractionist and the refractionist must be looking straight into the right eye of the patient. Now, the moment the object becomes perceivable to the refractionist the patient also indicates that he is also aware of its presence, the external field of indirect form perception may be regarded as normal in this meridian. The refractionist then proceeds to make this test over in various other meridians and then reverses the procedure for the patient's left eye. If the patient's answers conform to the refractionist's ability to see the test object the patient's form field may be regarded as normal. Any marked shrinkage in the size of the field in any of the various meridians tested immediately call for a more thorough examination of the patient's entire field, as it is easy to see that this test is at best quite crude and only suitable for roughly measuring the external limits of the form field. The testing of the patient's field of color perception, and direct visual centers, must be left to the more refined methods of perimetry, such as the following:

The Morton Perimeter Test—The instrument needed in making this test is the Morton perimeter. This is a new instrument and one that should prove very popular with all refractionists. It was devised by Dr. H. McI. Morton of Minneapolis, and it meets the three requirements of all good instruments. It is quick and easy to operate, inexpensive to buy and accurate for all general types of perimetry work. The instrument consists of a spherical one-quarter inch brass frame, fourteen inches in diameter, from which are fastened twelve brass rods, which form the radii of the fourteen inch circle. These rods, or meridians, along which the test is carried out, meet at a common center or pole of the instrument. This pole is made to correspond to the macular region of the eye, by the insertion of a small metal disc showing the blind spot, etc. Upon each of these grooved semi-circular meridian rods, which are measured off in degrees, are placed four small movable round markers which slide along in the grooves. The marker's consist of, first, the white, and then the three principal colors, blue, red and green. These forty-eight markers form the test objects with which the test is made. The entire instrument or frame is finished in a dull black and is mounted on a handle which extends downward from the fourteen inch circular inner edge of the instrument. From this handle a metal sighting device protrudes upward and slightly inward, ending at the exact center of the instrument. Opposite this sighting device, at the pole or macular region of the instrument, a small hole has been made to assist the patient in the matter of fixation.

In using the Morton perimeter the patient is seated in a well illuminated room, but not facing the source of light. This is an important matter, for should the test be made with the patient facing an open window or a strong light it would be nearly impossible to distinguish the various colors of the markers and would also diminish the pupillary area to such an extent as to materially cut off some of the visual field.

The patient being comfortably seated, his left eye is now excluded. This can be done in one of two ways, either by using a bandage or folded linen cloth to exclude the eye while testing its mate, or by the use of the small black silk monocular eye patch which has the silk tapes attached. The silk tapes tie behind the patient's head. The latter method is quite preferable. The patches are quite in expensive when purchased in quantity and although a new patch is required with each refraction, of course, the ease of application, plus its obvious advantages over bandages, makes it quite preferable.

The left eye now being excluded, the patient is handed the perimeter. He is requested to place the small sighting device directly below the right eye. This being done, he is asked to look through the small aperture at the center of the macular region or pole of the instrument, directly opposite his right eye. This is his point of fixation during the entire test, and the refractionist must impress upon the patient the necessity of fixing his attention on this point. This is one of the most difficult features of making or charting the field of vision. The average patient finds it extremely difficult to keep his or her attention fixed, on a given point, for any length of time while markers are moved about. The natural tendency is to rotate the eye with the

movement of the marker, but with a little patience the refractionist will find it not at all impossible to get and hold the patient's attention during the examination and plotting of the field.

In using the Morton perimeter the "Visible to Not Visible" mode of procedure is preferable. By this is meant, the markers are started out at the macular region and gradually moved along the meridian rods until they reach a point where they are no longer seen by the patient, as he "fixes" on the small aperture at the pole of the instrument. It is well, as I said, while using the Morton perimeter to use the "Visible to Not Visible" mode of charting the field. The reason for this is as follows: The logical method in taking the field is to use the white marker first, thus taking the form field of indirect vision. As this field is the largest possible field, the white markers would be slipped farther along the meridian rods than any of the colored markers which are to follow. After finishing with the form field, then proceed in taking the various fields of color perception, starting with the blue, then the red, and then the green. The reason for this order is that the field of color perception for blue is larger than that of red, and that of red larger in turn than that of green. Thus you can see that in using the "Visible to Not Visible" method of taking the field one can string all four markers on each meridian rod in succession without the markers interfering with each other in any way.

The refractionist now instructs the patient as to the method of procedure, stressing the point of visual fixation and moving the markers to show just what is to be expected of him. The test can be started in any meridian, the white marker moved inward along the meridian rod until the patient indicates that it is no longer visible to him. The marker is then left in this position and the white marker on the next meridian rod is taken and also moved inward until it is also lost sight of. This continues on all meridians until all the white markers are in the position indicated by the patient as the limit of his form field in the various meridians. If the arrangement of the markers corresponds to a normal field the case may be regarded as normal; if there is a marked shrinkage of the form field certain types of pathology are indicated and a searching ophthalmoscopic examination should take place. The next step is that of the color field. This, as I have said before, is started with the blue markers. These markers are moved just as were the white ones, along the meridian rods, and stopped the moment the patient indicates that he no longer perceives the marker as blue. This is done in all meridians and when finished is followed by the red markers, the procedure being the same as in the case of the blue ones. The green markers are used last and in the aforementioned way. When the markers are all in place one has not only the indirect field of form perception charted, but also the three principal fields of color perception before him, and any discrepancies can be noted. The Morton perimeter is an excellent one for outlining the various fields, but, like most perimeters, is quite useless in charting small scatomas, finding the blind-spot or in fact taking any data in the direct visual centers and the immediate surrounding area. For this purpose we use the third mentioned type of perimetry called stereo-campimetry.

The stereo-campimeter is an instrument devised by the Bausch & Lomb Optical Company, in an effort to assist the refractionist in the matter of plotting the central visual field. In this they have succeeded very well for the instrument is, when properly used, highly accurate and easily adjusted. The instrument is adequately described in the booklet "The Stereo-Campimeter" by Bausch & Lomb, as follows: "The stereo-campimeter consists of a substantial metal base of oblong shape, with vertical pillar containing an elevating device, which carries the object stage and holder for the stereo-lens system. This system includes a stereoscopic viewing device and eye screen."

The stereoscopic viewing device just mentioned consists of two Punktal prismatic lenses, mounted in a frame. These lenses can be rotated to correct any hyperphoria the patient may have by simply turning a small thumbscrew at the edge of the frame. The lenses can also be adjusted in horizontal position to assist the patient in getting a clear image of the object stage.

The object stage, as generally used, consists of a black slate ruled with vertical and horizontal white lines, etc.

It is upon this slate that the markers are held and the central field of direct vision plotted.

"Campimetry," as this type of perimetry is usually called, is the only form of field taking that is done binocularly. This, in itself, is an immense advantage over the monocular type of procedure, as the average patient finds it much easier to fix his attention on a given point with both eyes than he does with one.

The patient, wearing his distance correction, is seated before the instrument in the best diffused light possible, preferrably daylight and directed to look through the stereo-lens system, which is then focussed, at the campimeter slate. Small test objects are now moved about upon the slate while the patient's vision is directed to a central point of binocular fixation, which to the patient appears to be in the center of the slate. As the markers are moved about the patient indicates by the tapping of a bell or by some other signal the moment the marker disappears and reappears. With the aid of a white chalk pencil, with which to draw upon the slate, the blind-spot and any scatomas present can be definitely located and charted. Thus, the exact workings of the macular area of the retina can be examined and even the smallest defects noted.

The fourth form of field taking is that in which the rotating-ark perimeter itself is used. Instruments of this character will be found in many of the well equipped refracting rooms throughout the country, the various makes being about the same and all equally accurate. In discussing the instrument and its uses I will use as a model the McHardy-DeZing automatic self-registering perimeter, it being about standard. This instrument consists of a metal base, upon which is fastened, at one end, a vertical adjustable chin rest, and at the other end a vertical rod which holds the metal rotating ark, the meridian scale, the carrier drum and adjusting device, and the automatic recording pencil or style with sheet.

The instrument is used monoculary, one eye bandaged with the eye patch, as before mentioned. The patient seated in a comfortable manner before the instrument, with head resting upon the chin rest. The room should be well illuminated, daylight preferred. The perimeter sheet for either the right or left eye, whichever field is being plotted, should be put in place at the rear of the instrument and the patient directed to "fix" upon a small white stationery marker placed directly before the patient's eye at the center of the ark. The ark is now swung into position, most refractionists starting in the ninetieth meridian. In taking the form field the five milimeter white marker is turned into position on the movable carrier. Now either the "Visible to Not Visible" mode of moving the carrier or the "Not Visible to Visible" mode may be used. If the latter is chosen, the refractionist first places the carrier at the extreme end of the ark and then slowly slides it in along the ark towards the center until the patient indicates that the marker has become visible. The carrier is then stopped and its position on the ark is registered on the perimeter sheet by pressing this sheet against the automatic movable pencil or style. This being done in all meridians, the result will show the exterior edge of the form field of indirect vision. Should the refractionist elect to use the "Visible to Not Visible" mode of charting the field the carrier would be placed at the center of the ark and then slowly moved along the ark until the patient could no longer see it. This the writer believes to be the best method, in as much as any large defects of the central position of the retina could be plotted at the same time that the form field is taken. The color tests can also be taken in this way, the marker changed to blue, red, yellow or green and the carrier moved from the center along the ark until the color is no longer distinguishable. With the automatic recording device this instrument becomes the most accurate in taking form fields and is of great assistance in enabling the refractionist to determine whether the patient's vision is impaired by any pathological defects of the retina.

It is therefore easily seen, that, in taking and charting the visual fields, two instruments should be used if scientific accuracy of the modern refraction is to be used in this department of the work. The stereo-campim-

eter for the direct central field and either the Morton perimeter or one of the various types of rotating ark perimeters for plotting the indirect fields. These instruments being used, the refractionist would have at his command valuable data which would materially assist him in the further handling of the case.

SOME ORIGINAL IDEAS ON MUSCULAR ANOMALIES

PART II

By J. W. Parker, Opt. D.

Kansas City, Mo.

My article in the November, 1925, issue of this journal has been criticised because of the statement that we do not (under normal conditions) use our abduction. My critic holds that the mere act of turning the eyes from right to left or vice versa involves abduction. Lewis defines abduction as: "The act of turning the eye outward from a position of rest." He does not say "eyes," which might give the definition a different meaning. However, he follows the definition with the instructions for measuring the power of the abductor muscles in which he says: "Find the strongest prism, base in, with which the eyes can overcome diplopia." You will agree with me, I am certain, that this test, which we always speak of as "the duction test," does not show how far we can turn the right eye to the right nor the left eye to the left. It shows the degree to which we can force the eyes from a parallel position outward.

Lewis defines adduction as: "The movement of the eyeball inward from its position of rest." The point of rest, normally, is with the visual lines parallel. Now, if abduction means the exact opposite of adduction, then I have no apology to offer. We are constantly adducting but never abducting except in the act of neutralizing a prism or in overcoming an esophoria. Perhaps it would simplify matters if we were to change our terminology so that convergence and divergence would refer to the **act** of turning the eye in or out and adduction and abduction to the **strength** of the muscles involved.

In the last article I promised to say something about hyperphoria. In testing for this condition the Maddox rod is, perhaps, the best test we have for distance and the double prism the best for testing at the reading point. Both tests should be employed and any discrepancy carefully noted. It is in these cases that we should be especially careful to inquire into the history. This is not so important where the imbalance is of low degree, but is highly essential when it runs to 2 prism diopters or more. Where the prism called for exceeds 2 prism diopters you are very apt to find, upon close examination, something in the nature of an ulcerated or impacted tooth, a small brain tumor, or what the osteopath would term a lesion of some kind. While it might be proper to prescribe prisms for temporary relief, you fail to do your full duty if you do not watch such cases carefully and call to your aid the dentist, the X-ray and the physician unless you are able to locate the real seat of the trouble.

Cyclophoria

Cyclophorias are rather rare, but cause plenty of trouble when found. I will not take up much space in their discussion, but feel like mentioning one fact that seems to have been overlooked. A cyclophoria may be the result of a misplaced axis on a strong cylinder. Suppose an eye requiring a strong cylinder at axis 80 and was wearing it axis 90. If the vision in the other eye happened to be good, this would cause no trouble, perhaps, except a little loss of vision and an uncomfortable feeling in the eye. If, however, the acuteness of vision in this eye happened to be better than in the mate, then there would be a strong tendency for the eyeball to rotate so as to bring the faulty meridian exactly

parallel with the cylinder. This would not always happen any more than three or four diopters of hyperopia would always cause strabismus convergence. That it does sometimes happen, I am fully convinced. Just last week I had a patient who had been wearing a cylinder 10 degrees off axis and there was a cyclophoria of about one-third of that amount.

Exercises

There are so many methods of exercising the recti muscles and so many of them are good that it seems impossible to add much to what is already known. There are a few underlying principles, though, which deserve some mention. When we speak of a recti muscle as being weak, we do not, as a rule, mean that the muscle is intrinsically weak, such as might result from malnutrition, etc. What we really mean is that the innervation is insufficient. Exercising these muscles, then, is more a matter of training the nervous system to properly perform its function. All exercises consist of some method of causing the muscles to alternately contract and relax. Trying many different methods and closely watching the results, I have found that best results are obtained when the period of contraction exactly equals the period of relaxation; that the rotary prism is absolutely unsuited for either taking the ductions or giving an exercise. Also that it is highly essential to use various methods of giving the exercise in order to keep the patient's interest aroused and for the general psychological effect. A favorite method of the writer's is to place before the eyes sufficient prismatic power to almost cause diplopia. Then by holding the red glass disc before one eye the fusion breaks and the muscles relax. Taking the red glass away again stimulates the fusion sense and the muscles contract. Now and then we meet with a case in which fusion sense is not perfectly developed. It acts the major part of the time, but under certain conditions it breaks. Sometimes, of course, it is wholly lacking. Such cases are best handled with the amblyoscope or adjustable stereoscope and require much time and patience. Instructing most patients to take any form of "home exercise" is a waste of energy.

EXTRA-OCULAR TESTS

A. B. Howard, Opt.D.

Ware, Mass.

Some years ago we used to read of tests for blood-pressure and urinalysis as applied to optometric work. At this time there was much discussion as to the diagnostic advantages gained by those making these tests. Now we have a higher sounding title, "extra-ocular tests"—meaning the same thing, only more of it, and we fear the end is not yet.

Much material has been printed in the optometric journals in favor of these tests, yet, as I see it, these tests are really back-door assaults on the practice of medicine.

One southern practitioner writes that he cannot see why the optometrist should not be allowed to practice medicine in a limited sense. He wishes to be permitted to remove bits of foreign matter from the eyes of his patients and to do other things of similar order, thus to gain, we suppose, a reputation of being something other than an optometrist. Now it seems to the writer that this man is courting trouble, for it has been taught for years that an optometrist was not a physician in any sense of the word, and the public now so regards and respects him. It has been many years since the writer has been called upon to do other than optometric work by one of his patients, while I frequently receive calls from patients who wish to know the name of some good physician to whom they can take their friends or relatives who are suffering from some type of ocular pathology.

There seems to have been a lot of trouble stirred up because our national society passed a resolution prohibiting these extra-ocular tests. One state society went so far as to pass a resolu-

tion condemning the first. The writer believes whole-heartedly in the A. O. A. resolution, believing that these extra-ocular tests should be prohibited, and that we should not in any way practice "limited medicine," for such a practice will lead to one of two things, either the optometrists will in the future become physicians or that the profession of optometry will be absorbed by the practice of medicine.

We must also consider optometric legislation. How were our laws enacted in the first place, and on what basis? Was it not distinctly stated that an optometrist was to examine eyes only? He was to do this in subjective and objective ways only without the use of drugs. Where is there, in any law a phrase about using tests, technic or drugs, which might conflict with existing medical laws. Yet we read with some interest from the pen of an optometrist in Vermont, who goes to great length in an article to tell us about his different instruments among which we find several used in making urinalysis tests. I wonder just how much actual knowledge he has of that subject? When we consider that some of the best physicians are in doubt as to the findings in these tests, how can a man who has had no medical training be expected to find any specific results? The writer has had some personal experiences with this subject, having been through many of these tests and has had many different diagnoses made, by some of the best medical men in New England. If these physicians could come to no agreement, what chance has an optometrist with his ocular training only, of success in making these tests? The same is true of the tests for blood pressure. The writer has been through this also, many times, and frequently with questionable success. In these tests the question is what is normal blood pressure? It may vary from a systolic of 115 to 145, depending entirely on the individual and no man with medical or optometric training can exactly know, nor can a physician tell much about the patient's condition from the results of this test without making a very painstaking examination of other physical factors.

The argument is frequently made that ophthalmoscopy is on a par with sphygmomanometry. The writer does not see the comparison here, in as much as the ophthalmoscope is an optical instrument and is used for a visual exploration of the interior of the eye, and what is shown there is pertinent to our work. Not so, however, with the sphygmomanometer. Here you are dealing with the general physical wellbeing of the patient direct, and while we as optometrists are of course interested in this, we should leave the advice on the subject to the best qualified group, i. e., the physicians.

Rather than use these extra-ocular tests the writer suggests the more simple and effective use of the pin hole disc. This is found in every trial case and should be on every optical instrument. If there is any abnormal condition the pin hole disc will almost certainly show it.

Optometry should be like the tub, which not only should be, but is, able to stand on its own bottom, regardless of other professions and their work, and regardless of these extra-ocular tests. The writer believes these to be a fad taken up by only a few optometrists and he likewise believes that these tests, as they relate to an optometric practice, will die out in time as did the use of the violet ray machines which were so loudly proclaimed a few years back and which are never heard of today. If optometrists will stick to their proper sphere, the examination of eyes and the prescribing of lenses, they will continue to be respected and prosper but we must be ever careful lest we place ourselves in such position as to permit us to become accused of trying to do the things which we are not educationally qualified to do.

PRACTICAL NOTES AND CURRENT REFRACTIVE TOPICS

R. M. Peckham, Opt. D., F. A. A. O.
Waterbury, Conn.

GIVING EXERCISES

We frequently hear an optometrist state that he has not time to give innervational exercises to those of his patients who need them. Therefore, he fits them with glasses as best he can, and hopes for the best. And the best is, as a rule, not any too good. Sometimes he manages to retain the client, but seldom is the client a very good booster. More often he loses the client, who goes drifting from office to office, seeking comfort, until finally he locates a practitioner not "too busy" to care properly for his clients. This last man then gets all the praise, all the glory, all the free advertising, that the first man might have had if he were not "too busy."

This "too busy" excuse usually, not always, but usually, comes from men who do not know how to charge for their services, or from those who spend some hours a day doing their own shop work. To the latter, it might be said that there is more money to be made in the refracting room than in the shop. It costs too much in dollars and cents for a refractionist to spend his expensive time in edging and mounting, if by any possibility he can work up more business at a higher rate of pay in the consulting room. Giving exercises affords such a way, and is legitimate, highly profitable, and a great builder of reputation.

But time spent in giving exercises must be charged for. Six or eight patients can be put through their "daily dozen" in the same time that is spent in examining a pair of eyes and selling the needed spectacles. The man who has ten or twelve patients coming daily for exercises can add fifty or sixty dollars a week to his income without losing a single refraction, if he plans his day right.

Exercise periods should seldom exceed five minutes of genuine work, never go above ten minutes. The greatest problem is to prevent the patient from wasting our time. The least encouragement to conversation, and the period is protracted to fifteen or twenty minutes. The patient must be instructed that she is to appear at a certain definite hour, and be ready on the minute. She must have her hat and coat removed and walk directly to the chair in which she is to sit. After the five-minute period, she must be quietly taught to leave the consulting room without delay for pleasant conversation. The optometrist need not be rough or discourteous in getting the patient out, that is not at all necessary. But she must know that she is being charged for the time she spends, and when she understands this, she is not going to pay ten dollars per hour for the privilege of conversation.

Another point: The patient must pay for the period whether she comes or not. Otherwise, since the essential of successful exercising is regularity, accomplishment of the desired end will be dubious. Also, the optometrist will be left with an uncovered period on his hands.

Exercising can be made to pay, both from immediate cash returns and from the enhanced reputation they give the practitioner. Few practitioners are so successful that they can afford not to give these innervational exercises.

THE SIZE OF THE PUPIL

Contraction of the sphincter iris seems to accompany convergence, according to the modern viewpoint. The observing optometrist will note that almost always in esophoria the pupil is small. Exceptions to this are rare and are symptomatic of systemic troubles. This peculiarity is so marked that it is almost impossible to declare that esophoria will be found, even before the phoria test is made, if the pupils seem unduly small.

And it is just as certain that we will find convergence difficulties when we see large pupils. And prism exercises, when they have overcome these con-

vergence difficulties, will show, as a concomitant result, a reduction in pupillary diameter.

The child with esophoria, on account of the accompanying small pupil, will develop high acuity of vision at an early age. The child of eight or ten with vision of 20/XV is not to be congratulated on possessing a "fine pair of eyes." Rather, this should be taken as a warning of developing esophoria, which if not checked may lead to later misery and suffering.

Such a child may be taken in hand and by prism exercises, prism base in, an ability of convergence relaxation may be developed that will render him able to care for the esophoria without strain and fatigue.

On the other hand, the child with large pupils will not develop a high visual acuity. And such a child can be given exercises with prisms base out, to develop the ability to care for the exophoria and to associate the functions of accommodation, convergence and pupillary contraction in their normal relationship.

THE OPHTHALMOMETER LIGHTS

If, in the mire boxes of the ophthalmometer, one new lamp and one old lamp are used, we can add to the speed and precision of the readings. The old lamp will give a reddish color to the mire which will provide a strong contrast to the white light from the new lamp in the other mire. Precision in the reading is thus made much easier.

PRISMS FOR "WEAK MUSCLES"

That prisms base in for weak convergence, or base out for accommodative esophoria, are "poison" is an undeniable fact. They should be avoided as much as possible, only given as a last resort, and with the feeling that though they may give temporary relief, yet we are really weakening a function.

A prism base over a muscle inhibits the innervation of that muscle. If that muscle's functioning is already impaired, the prism base will render it still more inactive.

The prism apex attracts innervation to the muscle over which it stands. Some very brilliant results have been obtained by giving weak prisms, base out, in cases of troublesome exophoria and poor convergence. And in stubborn esophoria, the prescription of bifocals with prism segments, bases in, sometimes accomplishes wonders.

It is stated that there is no disagreement among writers as to the necessity of correcting in full all hyperphorias. But such correction tends to the production of loss of balance and equilibrium. The usual course is to correct an apparent left hyperphoria with prism base down over the left eye; or a right hyperphoria is corrected with prism base down over the right eye.

The present writer has found this correction provocative of further troubles. For in a left hyperphoria the difficulty is that the left eye does not easily and quickly turn down equally with the right eye; it prefers to turn upward, or not to turn down so much. Prism base down only encourages its bad habits.

But a weak prism base up over the left eye that has upturning desires, discourages its upturning. The trouble is that the superior rectus is getting too much innervation, the inferior rectus too little. Prism base down withdraws what little innervation the inferior rectus has, and still further energizes the superior rectus. We can transpose this innervation by putting a weak prism base up over this upturning eye, and this will discourage its bad habits. I have found this treatment so successful in so many cases, that I have no hesitation in recommending it.

About one-third of the apparent defect is given with this reversed prism treatment. If the hyperphoria amounts to 1 prism diopter, prescription of 0.25 degree prism base up suffices. If the hyperphoria measures as much as 3 prism diopters, give 1 degree prism base up. If uncertain as to whether it is the left eye that turns up or the right eye that turns down, and this is sometimes practically impossible to learn, divide the prism between the two eyes.

Of prism base out for weak convergence, 1 prism diopter over each eye is usually all that can be tolerated, and sometimes not this much. Do not try to force innervation, just give it a gentle stimulus.

SPECIAL REPORTS

OCULO-PRISM TREATMENT— WHY?

C. N. Albertson, Opt. D.
St. Paul, Minn.

Oculo-prism treatment by the optometrist is here. And it has unquestionably come to stay.

There are just two reasons why this should be. It gives a better and a more complete optometric service to the public. Furthermore, it pays the optometrist.

Service and remuneration! Where can one find a happier combination! Why shouldn't it become a practical working factor in the professional life of every optometrist!

The optometrist who does not understand the treatment phase of his profession, and who does not put it into actual practice in his daily work, is missing two-fifths of his opportunity. For two-fifths represents that proportion of eye defects, not including those due to diseased conditions, that should have muscle treatment. Two out of every five persons having ocular deficiencies that can be cared for by an optometrist, according to statistics given by those who should be in position to know, are affected more by some muscular imbalance of the eyes or lack of muscular tonicity than by refractive error.

When an optometrist has simply refracted and fitted with glasses, where glasses are needed, all the patients who have come to him for professional service, he has done approximately three-fifths of what he should have done.

Hundreds—yes, thousands—of persons of the Northwest are today unable to do "close work" for any length of time, either with or without glasses, without untold suffering. Others are more generally affected with asthenopia and photophobia; or it may be with headaches, nervousness or nausea brought on by the extrinsic muscle conditions of their eyes. The most of these are oculo-prism treatment cases.

A woman living in Iowa heard of certain ocular treatment work that was being done in St. Paul. She had lived in torment for years due to the condition of her eyes. She had been to many eye specialists. Most of them told her that it was the condition of the extrinsic muscles of her eyes that was giving her her trouble, but none of these professional men had given her relief. She came to St. Paul, took daily oculo-prism treatments for a month, and when discharged, her distressing symptoms were gone.

The simple statement of facts reads like a patent medicine ad. It is but one of many cases, however, in which the complete optometric service, as it stands at the present time, gave relief where a mere ocular prescription had failed.

Again: A man from New York moved to St. Paul. He came in for a refraction, stating that his lenses possibly should be changed. He was told, after a careful and thorough examination, that his eyes needed muscular treatment. He took the treatment; and in the due course of time, was dismissed. A month or so later, while in the office, he casually remarked that our Minnesota climate certainly did agree with him. Then he explained that he had completely recovered from a stomach trouble that had affected him for years and on which he had spent thousands of dollars in fruitless efforts to effect a cure.

Either through an inadvertence or an inability to get the facts, his stomach trouble had not been mentioned at the time of his eye examination. But the nausea with which he had suffered for years had unquestionably been due to the unbalanced condition of the muscles of his eyes.

Scores and scores of cases might be cited, each one telling an interesting story all its own. More and more do they arrange themselves into types and classes; yet each one is a complete study by itself, varying in some ways from all others.

To give the technique of oculo-prism treatment would mean to write a book. It certainly is not a superficial sideline. The practicing optometrist must

study it consistently for months before he can master all its intricacies; and he must just as consistently practice it if he would expect to acquire the necessary skill with which to get the desired results in the more difficult cases.

Oculo-prism treatment work is well worth all the effort required, however, to get the scientific knowledge and the professional skill with which to put into practical working effect this, one of the most important phases of optometric practice.

LEGISLATION FOR BRITISH OPTOMETRISTS

Part II

(Continued from the December Issue)

Duties and Powers of Central Board.

9. The duties and powers of the Central Board shall be as follows:

(1) To frame rules—

(a) Regulating their own proceedings;

(b) Regulating the manner in which the elected members are to be elected to the Central Board under section seven;

(c) Regulating the manner of keeping and controlling the register;

(d) Regulating the issue of certificates and the conditions of admission to the register;

(e) Regulating the admission to the register of persons already in practice as sight-testing opticians at the passing of this Act;

(f) Regulating, supervising, and restricting within due limits the practice of sight-testing or testing sight by opticians;

(g) Deciding the conditions under which the names of opticians should be removed from the register;

(h) Regulating the course of training for sight-testing opticians;

(i) Regulating the conduct and holding of examinations when necessary.

(2) To decide upon the removal from the register of the name of any person for disobeying the rules and regulations from time to time laid down, under this Act by the Central Board or for other misconduct, and also to decide upon the restoration to the register of the name of any person so removed:

(3) To appoint a secretary, registrar, and such other officers and assistants, including examiners, as may be necessary:

(4) To issue and cancel certificates:

(5) To decide as to the proper title or titles to designate fitly the practice of sight-testing opticians;

and generally to do any other act or duty which may be necessary or expedient for the due and proper carrying out of the provisions of this Act.

Rules framed under this section shall be valid only if approved by the Privy Council, and the Privy Council may confirm any such rules without modification or with such modifications as they may think fit, and any rules so confirmed shall have effect as if enacted in this Act.

Any rules made under this section may be rescinded, revoked, amended, or varied by rules made in the same manner and subject to the same approval.

Provision of Register.

10. (1) A register shall be kept as accurately as possible by the registrar in accordance with rules to be laid down from time to time by the Central Board, to be styled "the register of sight-testing opticians," which shall contain a list of—

(a) The names of those persons registered under section five, subsection (1) of this Act;

(b) The names of all other persons registered under this Act

in alphabetical order according to the surnames, and shall state the full names and addresses of registered persons, and subject to the provisions of this Act shall contain such particulars and be in such form as the Central Board may from time to time direct.

Custody of Register.

(2) The register shall be deemed to be in proper custody when in the custody of the registrar appointed by the Central Board, and shall be of such a public nature as to be admissible as evidence of all matters therein on its mere production from that custody.

Evidence of Registration.

(3) The Central Board shall cause a correct copy of the register to be from time to time and at least once a year printed under their direction and published and offered for sale, and any such copy shall be admissible in evidence:

Provided always that in the case of any person whose name does not appear in such copy a certificate under the hand of the registrar of the entry of the name of such person in the register shall be evidence that such person is registered under this Act.

Persons to Be Heard by Central Board Before Removal of Name.

(4) No person shall have his name removed from the register without having been previously given an opportunity of being personally heard by the Central Board.

Change of Address.

(5) Every person registered under this Act shall forthwith notify to the Registrar any change in his name or address and any person neglecting so to notify shall be liable at the discretion of the Central Board to be struck off the register.

Notice of Death.

6. Every registrar of deaths in the United Kingdom on receiving notice of the death of any person on the register of sight-testing opticians shall forthwith transmit by post to the registrar a certificate under his hand of such death with particulars of time and place of death, and may charge the cost of such certificate and transmission as an expense of his office, and on the receipt of such certificate the registrar shall erase the name of such person from the register.

Penalty for Obtaining Registration by False Pretences.

11. Any person who procures or attempts to procure registration under this Act by making or producing, or causing to be made or produced, any false and fraudulent declaration, certificate, or representation, either in writing or otherwise, shall be guilty of a misdemeanour, and shall on conviction thereof be liable to be imprisoned with or without hard labour for any term not exceeding twelve months.

Penalty for Falsification of Register.

12. Any person wilfully making or causing to be made any falsification in any manner relating to the register, or forging or issuing or assisting in forging or issuing any certificate purporting to be a certificate under this Act, shall be guilty of a misdemeanour, and shall be liable on conviction to imprisonment with or without hard labour for any term not exceeding twelve months.

Appeals.

13. Where any person deems himself aggrieved—

(1) By any decision of the Central Board to remove his name from the register, such person may appeal therefrom to the High Court of Justice within six months after the notification of any such decision to him, but no further appeal shall be allowed;

(2) By any determination of any court of summary jurisdiction under this Act, such person may appeal therefrom to a court of quarter sessions.

Registration Fees.

14. There shall be payable to the Central Board in respect of the registration of any person who applies to be registered under section five, subsection (1) of this Act such a fee not exceeding ten shillings and sixpence, and in respect of the registration of any other person who applies to be registered such a fee not exceeding five pounds as the Central Board may determine.

(2) There shall be payable to the Central Board by every person on the register on or before the first day of January in each year such a fee not exceeding one pound as the Central Board may determine, and in default of payment such person shall be liable to have his name removed from the register.

Application of Money.

15. (1) Any sum or sums of money arising from conviction and recovery of penalties as aforesaid shall be paid to the Central Board.

(2) All moneys received by the Central Board arising from fees to be paid on registration and from annual payments by persons on the register from the sale of copies of the register, from penalties or otherwise, shall be applied in accordance with such regulations as may be made from time to time by the Central Board in defraying the expenses of registration and other expenses of the execution of this Act.

Accounts to Be Kept.

16. The Central Board shall enter or cause to be entered in books to be kept for that purpose a true account of all sums of money by them received and paid under this Act, and such accounts shall be certified as correct by an accountant, who shall be a member either of the Institute of Chartered Accountants or of the incorporated Society of Accountants, and a statement of such accounts shall be annually laid before the Privy Council.

Recovery of Penalties.

17. All fees under this Act may be recovered as ordinary debts due to the Central Board, and all penalties under this Act may be recovered and enforced in accordance with the provisions of the Summary Jurisdiction Acts. A prosecution under this Act may be instituted by the Central Board in the name of the registrar, but shall not be instituted by a private person without the consent in writing of the Central Board. The Central Board may bring and defend all actions or institute any proceedings in the name of the registrar.

REFRACTIVE COUNSEL

Dr. R. M. Peckham, Optometrist, of 111 Bank Street, Waterbury, Conn., will answer in these columns questions regarding difficult refractive cases. Our readers are requested to send him full particulars of each case, which will be published along with the reader's initials only. These questions and answers will appear monthly. Also in this department Dr. Peckham would like to receive the accounts of unusual cases which have been satisfactorily handled, which will be published, if accepted, over the practitioner's name.

From Dr. M. Steinfeld, Paducah, Ky., comes the report of a case, apparently of the type commonly called "premature presbyopia," but which proved to be not due to structural inability to accommodate, but merely due to lack of education in the use of accommodation, and of undeveloped association of accommodation and convergence.

The case report is so typical of a class of patients who come to the optometrist complaining of ocular fatigue, but for whom better treatment than the prescription of glasses is available, that I have taken the liberty of appending some comments to the presentation of Dr. Steinfeld's report.

Dr. Steinfeld's Report

In my years of practice I can only recall one case of subnormal accommodation which actually required additional plus power to enable it to read ordinary print, and which did not prove to be merely a temporary condition. Many seemed to require stronger plus for reading with comfort, than would be accepted for distant use. But a large percentage of those which I was able to watch over a number of years finally accepted a stronger correction, indicating an under-correction.

The case described was under observation for ten years and there is no doubt of the correctness of the distant correction. The reading addition was necessary as in any case of presbyopia. While I had noted improvement in accommodative power when treating weak convergence, I hardly expected improvement in a case of this type.

The patient, a girl of fifteen, sickly and nervous, was first examined September 20th, 1915. The correction for distance was found to be O. V. plus fifty axis ninety, which gave vision 20/20—. The patient was unable to read with this correction and it was necessary to add plus one fifty for reading. Believing this to be a temporary condition she was given the cylinders for temporary wear. and referred to a physician for treatment. The accommodation failed to improve, however, and it became necessary to furnish her the additional power for reading. The patient has since been examined at intervals. She improved in health, took a position as bookkeeper, and although she discontinued the use of distant glasses for constant use the accommodative condition remained the same.

In May, 1925, she returned for distant glasses, complaining that her eyes tired in a show and she had a dull headache. As she had an insufficiency of convergence, it was decided to

have her exercise for convergence, hoping that the exercising would also improve the accommodation. For exercise to increase convergence I use the method of Gould, supplying the patient with loose prisms with which to exercise. I did not at this time feel that I could spare the time to give this patient daily treatments. I know the great objection to this method is that in many cases the patient will not carry out the treatment. However, in convergence weakness the results are even better with this method when carried out properly than with daily office treatments with the phorometer, and I emphasize very strongly the fact that results depend entirely on the patient. As convergence power increased it was noticed that accommodation improved and less addition was required for reading until at the end of the treatment the distant correction was given for all use.

The very satisfactory result of treatment in this case shows what great help can be given the different eye functions by exercising.

DISCUSSION: An improperly innervated organ presents practically the same symptoms as does a structurally perfect organ. Happy is the diagnostician who is able to differentiate between structural defect and defective innervation.

To every refractionist come many cases of young people complaining of difficulty in near work. According to the skiascopic tests, according to the accommodation tables of either Donders, Sheard or Jackson, these young people, in presenting poor amplitudes of accommodation, may be said to have the same trouble in doing near work as do the true presbyopes. They are, therefore, usually given "rest glasses," which they are to use in studying or doing other near work.

Nearly always there is also a low amplitude of convergence. There is usually more or less exophoria manifest. The prescription of weak plus spheres for reading sometimes increases and sometimes does not increase the amount of exophoria.

These cases should be regarded, until positive proof to the contrary is gained, as instances of arrested development. It is then the duty of the optometrist to step in, and, with innervational exercises complete the task of innervational education which Nature has failed to carry through.

The writer has had very good success in treating these cases with kratometer exercises. The exercises are conducted with the fixation target at the reading distance. Each prism "jump" forces not only an impulse to convergence but to accommodation as well. Five to ten minutes a day for ten days to two weeks suffices to accomplish the required results.

It is needless to say that such treatment is preferred by the patient to the prescription of glasses. In cases of children, the parents are always delighted to learn that the child is not to be condemned to join the swelling army of "glasses wearers."

From every standpoint the optometrist is benefitted. The fee is higher for exercising than for a pair of glasses, and more willingly paid. That the optometrist is progressive, abreast of the times, not a mere "spex-seller," is demonstrated by his treatment of the case. News that he was able to properly care for the case without giving the dreaded spectacles spreads very rapidly. His reputation is vastly enhanced, and a few such cases properly handled are worth far more than the results gained by spending large amounts of money in direct forms advertising.

Many cases of very slight hyperopia or slight astigmatism can be successfully taken care of by innervational exercises rather than the use of glasses. This does not apply to all cases, by any means, but now and then there is a case of manifest hyperopia of a quarter diopter, together with some manifest exophoria, which can be relieved through exercises and glasses avoided. And often this apparent error is not a true error at all, but a manifestation of fatigue.

It is not the error that we need worry about, but the ability to care for the error through proper innervational habits, so that necessary work can be performed without fatigue.

We repeat, an improperly innervated organ behaves very much as does a structurally imperfect organ. Structurally defective eyes must have glasses, there is not yet known any safe way of avoiding them. But innervational defects are not to be cared for by glasses, but by methods that

shall educate the nervous centers in proper habits. The competent optometrist learns to differentiate between structural and innervational defects, and accords to each its proper treatment. (R. M. P.)

BOOK NOTICES

New Books for review should be sent to Dr. E. O. Fjelstad, 209 Yeates Building, Minneapolis, Minnesota. Only Books of such nature as to be of interest to optometrists will be used in this department. Optometric and Ophthalmic publications that have been issued in the past and which are still procurable through their publishers will also be reviewed, from time to time, as space permits.

Diseases of the Eye. By **Sir John Herbert Parsons,** F.R.C.S., F.R.S. Fourth edition. 668 pages with 21 plates and 326 illustrations in the text. New York. The Macmillan Co.

Treatises on the eye, as in any branch of knowledge relative to the human body, need revision at frequent intervals. With four editions in eighteen years, Parsons' book shows its popularity. The present edition has been completely revised, much new material has been added and the general appearance of the text has been changed.

The book is divided into eight sections as follows: Section One, eighty-three pages on the physiology of the eye, elementary optics, physiological optics and neurology of the eye. Section Two, sixty-six pages on the examination of the eye. Section Three, three hundred and twenty-five pages on diseases of the eye comprising twenty-two chapters on symptomatic disturbances of vision, intraocular tumors, injuries and operations. Section Four has twenty-nine pages on refraction and accommodation with one chapter of eight pages on retinoscopy. Section Five is composed of fifty pages on the disorders of motility. Section Six, twenty-one pages on ocular manifestations of diseases, nervous and systemic. Section Seven gives fifty-six pages on diseases of the lids, lacrimal apparatus and the orbit. Section Eight is a new chapter of ten pages on Preventative Ophthalmology.

As the books on diseases of the eye are many, the problem of choice becomes quite difficult; they are all good, but the library would become cumbersome and would contain much that was repetition if one were to have all of the books. Anyone choosing Parsons' book will not "go wrong" as it is valuable and makes a very good addition to a library. E. O. F.

ABSTRACT DEPARTMENT

Optometric and ophthalmic Journal articles and reprints to be abstracted should be sent to Dr. G. L. DuPlessis, 209 Yeates Building, Minneapolis, Minnesota. Only papers of interest to optometrists will be reviewed in this department.

Research on the Influence of the Stenopaic Hole on Near Central Vision. Nakajima, C. Nippon Gankakai Zasshi, 1921.

Nakajima concludes from experiments that: (1) The stenopaic hole or pin hole disc brings the near point closer in direct proportion to its size. With a hole .5 mm. in diameter the near point is always 5 cm. in front of the cornea and is uninfluenced by accommodation. (2) Its faculty to eliminate circles of dispersion suddenly appears with a 2 mm. diameter. (3) The amelioration in vision is due to the elimination of diffusion circles. (4) A small aperture diminishes visual acuity at distance. (5) In errors of refraction the stenopaic hole is equivalent to a correcting lens. (6) For an emmetrope, the stenopaic hole improves near vision and impairs distance vision. (7) When vision is less than 20/40 the improvement secured by the stenopaic hole varies inversely to its size and vice versa. (8) The 1 or 1.5 mm. hole is the best, as it improves near vision without much impairing distant vision.

G. L. DuP.

Influence of Ametropias on the Peripheral Limits of the Visual Field. Lo Russo. Annalia di ottal. e clinica ocul. Page 751, 1923.

LoRusso confirms the fact that in myopia the visual field is restricted, while in hypermetropia it is larger than in emmetropia. For every diopter of ametropia there exists a corresponding change of half a degree in the visual field. G. L. DuP.

A Pupillometer. Ferree, C. E. & Rand G. American Journal of Ophthalmology; December, 1925.

This instrument is designed to measure the exact size of the pupil and to observe its reactions and abnormalities. It consists of a telescope to magnify it, and a corresponding scale from which the diameter is read. This scale is illuminated by a small lamp without interfering with the reactions of the pupil. The whole instrument permits a wide range of measurements, does not reduce the amount of light entering the eye and does not interfere with the conditions under which the pupil must be observed. Its operation is easy and rapid and its construction relatively simple. G. L. DuP.

Sterling on the Measurement of Vision. G. E. Robin. Bulletin of the Optometric Society of the City of New York. Vol. 1, No. 7, 1925.

Sterling states that the three essentials of vision are, first, macular perception; second, indirect vision, and third, extrinsic muscle control. He further finds that if any one of these factors is missing the resultant vision is zero as far as its usefulness is concerned. Central vision gives us detail; indirect vision gives us a wide field and a power to sense motion, while without a proper balance of the extrinsic muscles binocular vision is, of course, impossible. Sterling suggests the recording of visual powers, taking all of the above into account. T.O.B.

A Concave Pinhole Disc. Pascal, J. I. The Optometric Weekly, Oct. 8, 1925.

Pascal reports a case of a myope of eight dioptres who accidently broke a small hole, about 2mm in diameter, in the center of one of his lens. This he wore without discomfort for some time and after having the lens replaced found that his distance vision was better through the small aperture than through the center of the complete lens. The refraction was verified and Pascal offers the following explanation for this unusual condition:

"The reason for this improvement is not very apparent. Possibly it is due to an increased amount of light entering the myopic eye through such a pinhole lens. I refer to this as a pinhole lens, although the opening is larger than the ordinary pinhole, say, about 2mm in diameter. Take the case of a myope wearing a minus 10 D. The pencil of light entering his eye has been strongly diverged by the lens; in fact, a pencil of light coming from infinity is diverged as if it came from five inches. A small volume of light is thus made to reach the eye.

"We can even delimit the extent of this pencil. All the light from a point that reaches the retina through this lens is comprised within the small angle formed by the extremities of the pupil and a point five inches away. Strictly speaking, the angle is slightly larger, being formed by the extremities of the 'entrance pupil,' which is sligtly larger and anterior to the actual pupil. This, however, is negligible. Furthermore, the volume of light entering the eye through the lens is lessened by the various reflections at the surface of the lens and some absorption by the lens substance. All this light is saved when it passes through the opening.

"Another factor which probably enters into this improvement is the possible increase in the size of the retinal image as formed by the pinhole lens. This is certainly so when the lens is placed in front of the anterior focus of the eye.

"As it would not be feasible to wear a concave lens with a hole in the center, a similar effect might perhaps be obtained by grinding a plano lens in the center of the concave lens, say, a 2mm plano disc surrounded by the full power of the concave lens. Whether such a lens could be made, and how, is another question. But this is a matter which offers a field for interesting practical experimentation."

T. O. B.

Charges for Optometric Service. B Meyrowitz. The Optical Journal, Vol. LVI, No. 21, pp. 27-31. 1925.

Meyrowitz analyzes the present-day overhead costs of optometrists and in a clearly written paper points out that the minimum fee which should be charged the patient for **a single vision** pair of glasses with refraction should be twelve dollars. He shows that any charge made under this figure actually results in a loss to the refractionist. He strongly condemns the few optometrists who still refract without a separate fee for this work and urges all optometrists to adopt a minimum refraction fee. T. O. B.

Visual Tests for Motorists. H. O. Rounds. The Optical Journal, pp. 35, October 8, 1925.

Rounds, in checking the acuity of vision of motorists who had had an auto accident, found that in five cases out of every one hundred the driver's poor vision was without question the cause of the accident. A detailed account of each accident as well as the patient's acuity and fields of vision were the basis for his report. C. C. K.

Toxic Amblyopia with Particular Reference to Methyl Alcohol Poisoning. B. J. Hoffman. Bulletin of the Illinois State Optometric Society, Vol. 3, No. 7, pp. 370-371. 1925.

Hoffman finds that usually the early period of intoxication is not attended with visual disturbances. The patient may or may not become insensible, later recovering consciousness without any noticeable impairment of vision. Within one or several days he usually recovers from his spree and seems to be none the worse for the experience, save for intestinal complications, such as severe irritation, cramps and vomiting, with rapidly failing sight. This may go on for several days or weeks, the sight as well as the gastro intestinal symptoms improving, and vision regained to a useful stage. After a short interval, however, vision again will show a decline, and it is at this stage where there is a slight chance of regaining what is lost.

This second decline and loss of vision is permanent and is not prevented nor improved by any form of treatment. This last feature is characteristic of Methyl Alcohol Poisoning.

There are no objective symptoms, but the ophthalmoscope shows some swelling and oedema of the nerve head, and may or may not show neuritis. Pallor of the disk and contraction of blood vessels develop graudally and may go to complete atrophy of the optic nerve. Usually there is a large central scotoma early, which early narrows down.

He further says that alcoholic drinks, even in small quantities, will reduce the ability to distinguish between light and dark green and red. The vision for red is affected more than the green. This latter phase is particularly dangerous in railroad or signal work. The longer the case stands, the less chance there is of recovery.

Where drunkenness from grain alcohol is easily recovered from, it is almost always of more or less eye disturbance or even complete blindness, when due to wood alcohol. Sudden blindness, accompanied by severe gastro intestinal disturbances, is very suggestive of wood alcohol poisoning, but central scotoma and optic neuritis following, is positive proof.

Methyl alcohol brings about a retinal change in the nerve fibres of the rods and cones and of the ganglion cells of the optic nerve. There is no doubt that many of these patients could be helped if seen early, but unfortunately one who has been on a debauch is slow to go to a physician and, as a rule, will minimize the importance of his folly and will actually try to conceal the facts. After severe loss of vision threatens his livelihood he is seeking the services of the specialist, and often too late.

Cases of this kind lack the characteristic picture of acute poisoning. Severe headaches and obscure nervous symptoms may be the first and only symptoms preceding loss of vision.

The prognosis of these cases is not bad if seen early and prompt treatment is instituted, but should always be guarded. We have to consider a slow but surely acting poison, which may show its effect upon the system for a long period following its injection. T. O. B.

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DR. JACK I. KURTZ, Room 209 Yeates Building, Minneapolis, Minnesota.

The Journal has no objection to the reprinting by other magazines of any of its articles, provided such reprints are properly credited to the American Journal of Optometry.

MEMBERSHIP DRIVES

Membership drives are of course necessary in organizations which because of their character require large numbers of members. This is true with state optometric societies. A state optometric society is a weak society or a strong society largely in proportion to the size of its membership roll, and because of this fact we see many of our state executive councils arranging for membership drives from time to time.

Admitting the above to be true it is also well to review this phase of organization activity from two other angles. First, an optometric society is composed of men largely dealing with the human system, men whose very work is essentially professional work and it is advisable during these drives to only admit men whose educational qualifications and ideals come up to a rather high standard. It is much easier to say "No" to the proposed applicant than it is to get him out after he has been admitted. All men who apply should be carefully scrutinized and only men of real worth should be admitted.

Second, it is advisable to arrange these membership drives in such a manner as to not interrupt the real business of the society. It is well to keep in mind that no one has ever joined a society to assist that organization in staging membership drives. This part of the organization's activities, while necessary, should of course be only a secondary incident in the year's work and the only thing the executive council should ever have before itself is, to promote the educational welfare of those optometrists already members. This is their real year's work and their failure of success lies largely in the effort they put forth to strengthen the society along educational lines.

Membership drives must be made but definite time limits should be put on these drives, and every effort should be made to clean up the work well within the time limit set, and then get onto the real business of the organization. We have no right to expend all of the society's efforts on the drive and leave nothing to the constructive work for the old members, nor have we the right to take men into the optometric organizations, whose ethics are such as to bring the society into ill repute.

C. C. K.

THE EDUCATIONAL DEPARTMENT OF THE A. O. A.

Dr. H. R. Spitler, optometrist of Eaton, Ohio, director of the A. O. A., and in charge of that organization's

educational department, has, within the past few days, issued an appeal to the state and local societies to more fully use the department's facilities in furthering their educational work. He says in part:

"Your state association is interested in the upbuilding of optometry and in advancing the professional standards and the individual practice of its entire membership.

"We feel that optometry has reached a point where the individual optometrist must lift himself into the place he wants to occupy in his community.

"Optometry, as a scientific profession dedicated exclusively to the service of afflicted humanity, rests upon a safe and secure foundation. It is up to us, as an association and as individual practitioners, to place optometry squarely upon that foundation.

"To build a public place for optometry that it may fulfill the destiny of its future, we must first build optometrists—men and women—who will recognize their individual obligations to their profession and to those whom they serve.

"To this end and in the furtherance of this ambition, the National Administration of the A. O. A. wants to help you to enlarge the membership of your state and local optometrical associations and their activities. We are all extremely anxious that the State Administrations shall be tremendously successful. And so we offer you the services of the departments of Educational Activities and the Public Information Activities. These two departments are directing much of their efforts to the holding of A. O. A. post-graduate clinics throughout the country.

"We recognize that these A. O. A. clinics will provide most fruitful sources of publicity to the public and will be of wonderful educational value to optometrists wherever held.

"The trustees of the A. O. A. have extended the scope of this work to cover every state—depending entirely upon the desire of the state and local associations and their willingness to co-operate with the department of Educational Activities, through which all arrangements for A. O. A. clinics are to be perfected and through which the department of Public Information Activities will supply the necessary publicity matter to insure the widest publicity of the sort to build up optometry.

"If you are at all acquainted with the results, where these A. O. A. post-graduate clinics have been held, you should have no trouble in interesting your entire membership in this great educational work.

"The cry has been—'Extend the benefits of these A. O. A. post-graduate clinics to the far corners of the nation.' And that is exactly what the administration desires to do. It only remains for us to get the co-operation and support of the state and local associations to make this extension an established fact. It can be done in no other way.

"Nothing you could do for your association, **or for yourself,** as an officer to whom the membership has entrusted its interests, would do them, or you, more good than to consummate arrangements for the holding of a number of these clinics in your state.

"If you want to arouse, not only your entire membership, but the public—the people who will be invited to bring their eyesight troubles to these clinics for solution and relief; if you want to make optometry the talk of every community where one of these clinics shall be held, then write me today for more definite details of the plan by which the department of Educational Activities, A. O. A., will co-operate with you to that end.

"Remember, we can only carry forward these A. O. A. post-graduate clinics through the state or local administrations. Write me today, if you are willing to get behind the plan."

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

STATE EDITORS

E. B. ALEXANDER, Oklahoma
A. S. ANDERSON, North Dakota
J. F. ANDREAE, Maryland
D. A. KINNEY, Iowa
H. B. KOLLOFSKI, Minnesota
C. A. PERRIGO, Nebraska

Reports of Society Proceedings in Iowa should be sent to Dr. D. A. Kinney, Charles City; in Maryland to Dr. J. F. Andreae, Baltimore; in Minnesota to Dr. H. B. Kollofski, St. Paul; in Nebraska to Dr. C. A. Perrigo, Freemont; in North Dakota to Dr. A. S. Anderson, Williston, and in Oklahoma to Dr. E. B. Alexander, Duncan.

IOWA MID-YEAR MEETING

The optometrists of Iowa are to hold a two-day educational meeting at the Hotel Savery, Des Moines, Iowa, on February 15th and 16th, 1926. The meeting is to consist of a mixed program and is to be a strictly educational one.

This meeting is being held in the interest of all who are engaged or interested in the optical industry. The matter of making arrangements for this meeting has been turned over to the Department of Education, of which Dr. D. A. Kinney is chairman and Dr. G. L. Goodale secretary.

On the evening of February 15th there will be a banquet and a most interesting musical program. During the two-day session able speakers from various points and an experienced clinician from Chicago will be present.

There will also be displays and demonstrations of interest.

The registration or membership fee has been conservatively placed at $6.00 per member and all who will are asked to lend their support by becoming "foundation members" and sending their membership together with their check for $6.00 dated February 1st, 1926, to the secretary, George L. Goodale, at Lenox, Iowa.

The names of all foundation members will be published in the Iowa Bulletin for January. Several memberships have already been received and from all indications this is to be a most interesting and successful meeting.

NORTH DAKOTA PLANS A SERIES OF SCHOOL CLINICS

Dr. A. S. Anderson, optometrist of Williston, secretary of the North Dakota Optometric Association, has announced a plan whereby school children can have their eyes examined at the offices of local optometrists on certain specified mornings of each week. The teachers and parents are now being notified of these arrangements in localities where state association members have agreed to this plan. Children sent to these men from the school will have a complete refraction made without the customary fee, the school or parent being notified of the child's visual condition.

ST. PAUL SOCIETY MEETS

The St. Paul Society of Optometrists met on the evening of December 8th. Dr. E. E. Jones presided. Dr. C. G. Mack, President of the Minnesota Society, spoke briefly on the coming convention. Professor J. Valisek of the University of Minnesota was the principal speaker, his topic being The Relationship of Optics to the Other Sciences, he pointing out how indispensable the principles of optics were to men in other technical fields. Dr. C. C. Koch of Minneapolis also spoke, his topic being Advanced Optometric Thought.

POSTGRADUATE CLINIC IN OKLAHOMA

All arrangements have been completed for the postgraduate course to be conducted by the association at Tulsa, the 13th and 14th of next month. Dr. Arthur E. Hoare, California, nationally known optometrist, will be the instructor in charge. Dr. Hoare will demonstrate practical modern optometry, as it is practised today, in the refracting room of the up-to-date optometrist. No optometrist who has the interest of his patients and himself at heart can afford to miss this course. There will be no fees or charges connected with the clinic. If you are paid up and in good standing in the association, you are entitled to all the privileges of this optometrist postgraduate course. Dr. H. S. Hannis, 311 S. Boston, is chairman of the arrangements committee. Write him for hotel reservations.

E. B. ALEXANDER, Opt. D.,
Secretary.

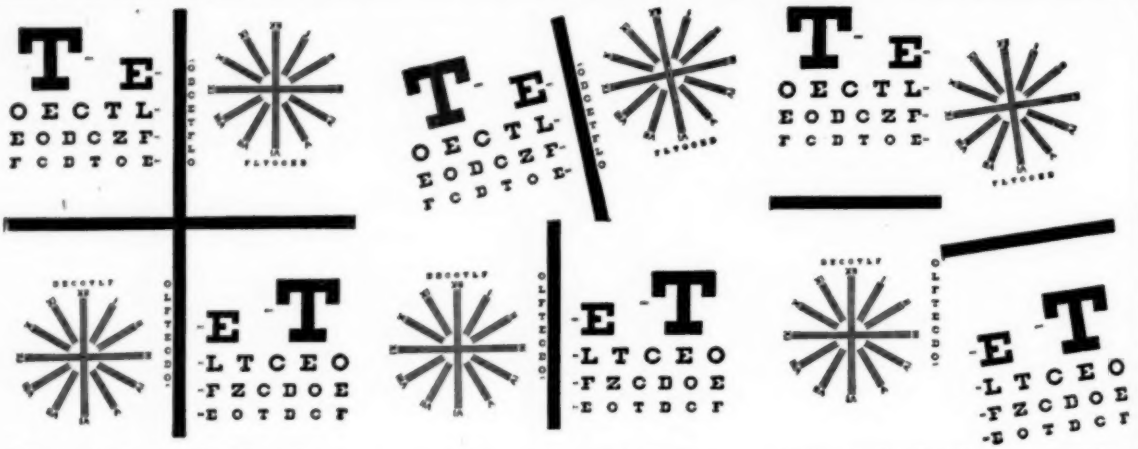
A. O. A. PUBLIC INFORMATION ACTIVITIES

The associate director of the A. O. A. Public Information Department reports, in a bulletin sent out recently, that there is a very satisfactory response to his call for volunteers for the "Salvation Army of Optometry." He also emphasizes the fact that it would be a useless waste of money and effort for the A. O. A. to conduct a national publicity campaign at this time and urges the optometrists to make use of the publicity material furnished by his department. Price lists and other information can be secured by writing to the Department of Publicity and Public Information, 304 Waldheim Building, Kansas City, Mo.

THE MINNESOTA ANNUAL CONVENTION

The annual convention of the Minnesota State Association will be held February 15th and 16th at the Ryan Hotel, St. Paul. Arrangements are under way and all the committees are working hard to make the convention a success.

Dr. Arthur Hoare of Los Angeles, California, A. O. A. clinician, will conduct a series of postgraduate clinics. There will also be other lecturers of note. Members are urged to plan now to attend the convention.



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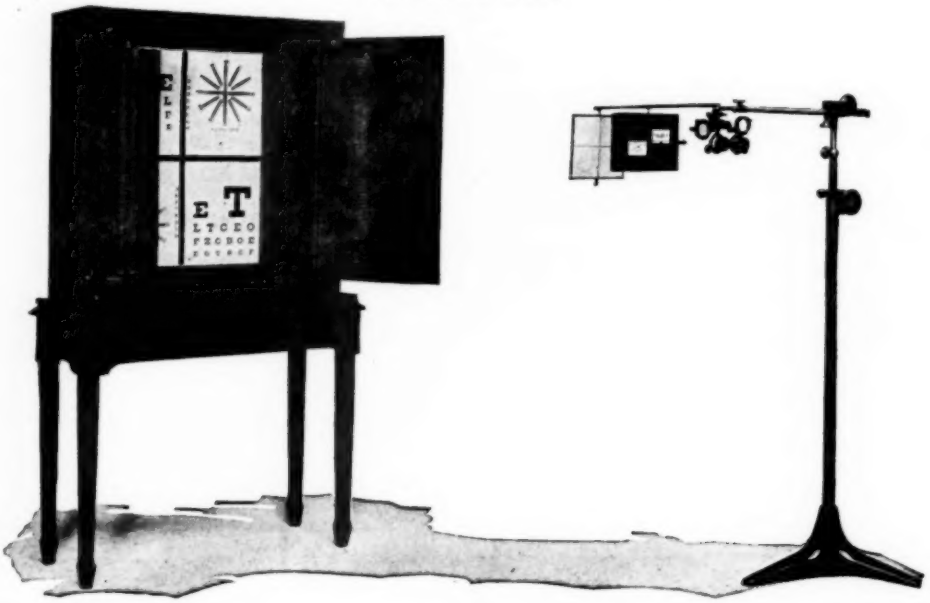

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